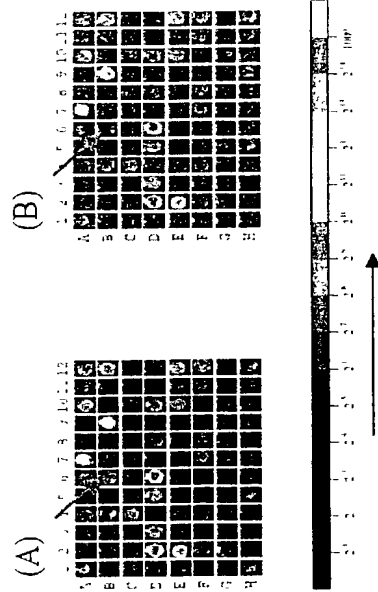
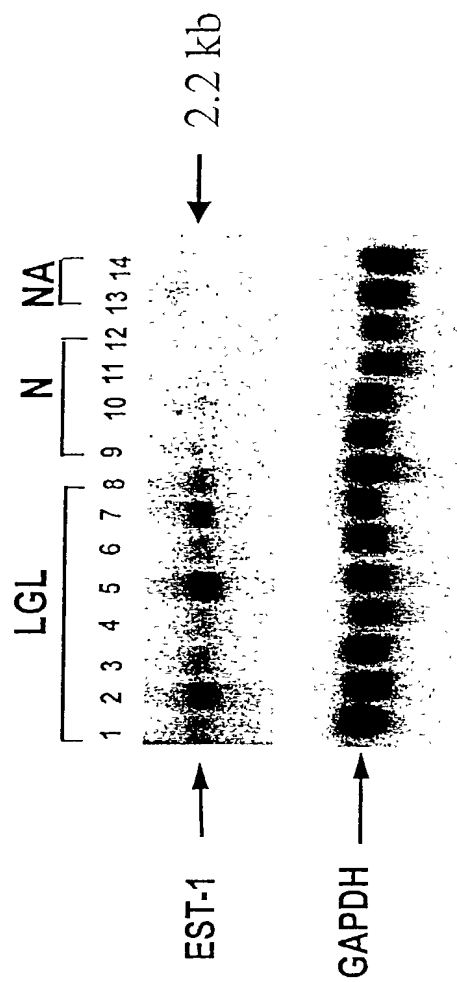


# Microarray



File 1

# Expression of EST-1 in LGL Leukemia



Northern Blot:

N=Normal, NA=Normal Activated

LGL = LGL Leukemia

EST-1 = Human Sphingosine 1-Phosphate receptor

BDE: 3.0 (544/182)

Figure 2

FIG 3

Human sphingosine 1-Phosphate receptor  
LOCUS tmpseq\_1 2336 bp  
SOURCE PBMCs (LGL)  
ORGANISM Human  
UNCLASSIFIED

4-DEC-2000

FEATURES Location/Qualifiers  
source 1. 2336  
CDS 10..1206,10..1206  
/note="predicted coding region"  
/translation="

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LGRHPRFHPMFLLGLSLTSLDLLAGAAAYANILLSGPLTLKLSPALWFAREGGVFVALT  
ASVLSLLAIALERSLTMRGPAVSSRGRTLMAAAAWGVSLLLGLLPALGWNCGLRLD  
ACSTVLPYAKAYVLCVLAFCVGLAALCALYARIYCQVRANARRLPARPCTAGTTSTRA  
RRKPRSLALLRLTSLVLLAFVACWGPLLLLLLDVACPARTCPVLLQADPFLGLAMANS  
LNPIIYTLNRLDLRLHALLRLVCCGRHSCGRDPSGSQSAASAAEASGGRLRRCLPGLDGSF  
SGSERSSPQPDGLDTSGGTSGGAPTAARTLVSEPAAD"

(SEQ ID # 3)

BASE COUNT 461 a 679 c 701 g 495 t  
ORIGIN

1 gcgcggccca tggagtccgg gctgctgccc cggcgccggg tgagcggagt catcgtccctg  
61 cattacaact acaccggcaa gctccggcgt gcgcgctacc agccgggtgc cggcctgcgc  
121 gccgacgccc tgggtgtgctt ggcgggtgtgc gccttcctcg tgctagagaa tctagccgtg  
181 ttgttggtgc tgggacgcca cccgcgcttc cagcctccca tgttcctgct cctgggagc  
241 ctccagttgt cggatctgct ggcaggcgcc gcctacgccc ccaacatcct actgtcgggg  
301 ccgctcagcg tgaaactgtc ccccgcgctc tgggttcgac gggaggggagg cgtcttcgtg  
361 gaactcactg cgtccgtgct gagcctcctg gccatcgccc tggagcgagc cctcaccatg  
421 gcgcgcaggg ggcgcgcgcc cgtctccagt cggggggcga cgtggcgat ggcagccgag  
481 gcctgggggg tgtcgtgctt cctcgggctc ctgcccagcg tgggctggaa ttgcctgggt  
541 cgcctgggag cttgctccac tgtcttgccc ctctacgcca aggcctacgt gctctctctg  
601 gtgctcgccc tctgtgggac cctggcgccc atctgtgcac tctacgcgcg catctactgc  
661 caggtaacgc ccaacgcgag gcgctgccc gaacggcccg ggaactgggg gaccacctgc  
721 acccgggccc gtcgcaagcc gcgctcgtg gccttgctgc gcacgctcag cgtgggtgctc  
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841 ccggcgccga cctcctgtt actcctgcag gccgatccct tccctgggag ggcctgggag  
901 aactcacttc tgaaacccat catctacacg ctccaccaac gcgacctgag ccacgcgctc  
961 ctgcgcctgg tctgctgccc acgccaactc tgcggcagag acccgagtgg ctcccagcag  
1021 tggcgagagc cggctgaggg ttcggggggc ctgcgcgctt gcctgcccc gggccttgat  
1081 gggagcttca ggggtcggga gcgctcctgc ccccgagcgc acgggctgga caccagcgcc  
1141 tccacaggca gccccgggtg acccacagcc gcccggaact tgggtatcga accgggtgca  
1201 gactgacacc ctccggccac gactgtcttc ccaagtttta cagacttggt cttttttacat  
1261 aaagggaatt gtaggaaatg cagccaaagg tgcagtcgga aaagatgcag gggaaatgta  
1321 ttatgcagc gacacccccc aatgtgaaca aacagacaaa aaatctgtgc cctcgtggaa  
1381 ttgacgttct gcttggaagc acagaaaaga actcgggtgat gaaataatgg agatgattcc  
1441 agtgacaaac gacagagatg gtgatggtgg tcagggaaga cctctctgca gaggtagtga  
1501 cttgtgatgt gagctgagac ctctgtcctg ggaagaccaa aagaaaagca ttccaggatg  
1561 aggggaatgg atgcgcgaag gccctgaggg tgaaatgtgc ccattgtgtc taagaaatgc  
1621 agcgatgctg gtgtgcctgg agcaggagag gagggggaga atgggaggag acaaggagct  
1681 gaaggagtag tccccgaagg acctgtgtgg tgatatagag gacttcgctt ttgctctgag  
1741 tgagggtggg gccatagaag cttctaaagc gaagagggac ttgcctaat tcagggtgac  
1801 acagggtgct tgtggcctcc atgggaggtt gaaaaccaca gaagggtgag gggggctgca  
1861 ctgagccaca ggaacaatga tggagattcc agctaagccc agaccccggt gattctagat  
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1981 atcaaggaca atgccaaggg tggggcacc ccaaatttga ctttgggaga ctcagccaaa  
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2101 tttttttttt tttaggttgg gatctgtgct tctgtcacc aggcctggag gcaatgggca  
2161 caattatagc tcaactgagc ctggaactcc tgggatcaag cctggagtgc ctgcttcagc  
2221 ctccctagta gctgggacta caggcatgca ccaccatgac cagtttaata aattcttca  
2281 aatgcacaaa aaaaaaaa aaaaaactcg aggggggggc cggtaaccaa ttcgccc

(SEQ ID # 4)

Figure 3

# Figure 4

Alignment of deduced Amino acid sequence with Nrg-1 and Edg-8 (rat genes)

```

Nrg-1      MESGLLRPAVPSEVIVLHYNTGKLRGARVQPGAGLRADAACVCLAVCAFIENLAVLIV
EDG-8      MESGLLRPAVPSEVIVLHYNTGKLRGARVQPGAGLRADAACVCLAVCAFIENLAVLIV
SPPR       MESGLLRPAVPSEVIVLHYNTGKLRGARVQPGAGLRADAACVCLAVCAFIENLAVLIV
          .....

Nrg-1      LGRHPRFHAPHFLLGSLTSLDLGAAAYATNILLSOPLTLRLSPALWFAREGGVTFVALA
EDG-8      LGRHPRFHAPHFLLGSLTSLDLGAAAYATNILLSOPLTLRLSPALWFAREGGVTFVALA
SPPR       LGRHPRFHAPHFLLGSLTSLDLGAAAYATNILLSOPLTLRLSPALWFAREGGVTFALT
          .....

Nrg-1      ASVLSLLAIAIERHLTWARRGPAPASRARTLMAVAANGLLLTLLGLLPALGWNCLGRLE
EDG-8      ASVLSLLAIAIERHLTWARRGPAPASRARTLMAVAANGLLLTLLGLLPALGWNCLGRLE
SPPR       ASVLSLLAIAIERHLTWARRGPAPASRARTLMAVAANGLLLTLLGLLPALGWNCLGRLD
          .....

Nrg-1      ACSTVLPYAKAYVLCVLAFLGILAAICALLYARYICQVQANARRLRAGPGSRATSSSR
EDG-8      ACSTVLPYAKAYVLCVLAFLGILAAICALLYARYICQVQANARRLRAGPGSRATSSSR
SPPR       ACSTVLPYAKAYVLCVLAFLGILAAICALLYARYICQVQANARRLRAGPGT-AGTTSTR
          .....

Nrg-1      SRHTPRSLALLRTLSTVLLAFVACWGPFLLLLLDVACPARACPVLQADPFLGLAMANS
EDG-8      SRHTPRSLALLRTLSTVLLAFVACWGPFLLLLLDVACPARACPVLQADPFLGLAMANS
SPPR       ARKPRSLALLRTLSTVLLAFVACWGPFLLLLLDVACPARTCPVLQADPFLGLAMANS
          .....

Nrg-1      LLNPIIYFTNRDLRHALLRLCCGRPCNQDSNSLQSPSAVSPSGGLRCLPPTLD
EDG-8      LLNPIIYFTNRDLRHALLRLCCGRPCNQDSNSLQSPSAVSPSGGLRCLPPTLD
SPPR       LLNPIIYFTNRDLRHALLRLVCCGRHSCGRDPGSGQQ-SASAAEASGG-LRRCLPPGLD
          .....

Nrg-1      RSSPSEHSCPQDGDMDTSCSTGSPGAATANTLVPDATD-
EDG-8      RSSPSEHSCPQDGDMDTSCSTGSPGAATANTLVPDATD-
SPPR       GSFSGSESSPQDGDMDTSCSTGSPGAATANTLVPSEPAD
          .....

SPPR: Nrg -85%
SPPR: EDG -86%
          * - single, fully conserved residue
          . - conservation of strong groups
          - conservation of weak groups
          - no consensus

```

Seq. 12 #5  
Seq. 12 #6  
Seq. 12 #7

11000240015 000000000



\*\*\*\*\*  
SEP. ID. #10  
SEP. ID. #11

FIGURE 5 (CONT.)

FIG. 5B

## Sphingosine -1-Phosphate receptor 2

LOCUS tmpseq\_1 1245 bp 30-OCT-2000  
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 ACCESSION tmpseq\_1  
 VERSION  
 KEYWORDS  
 SOURCE Unknown  
 ORGANISM Unknown  
 Unclassified.  
 FEATURES Location/Qualifiers  
     source 1..1245  
     CDS 11..322,11..322  
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         /translation="MESGLLRPAPVSEVIVLHYNVTGKLRGARYQPGAGLRADAVVCL  
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Seq. ID. #12

BASE COUNT	298 a	284 c	372 g	291 t			
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	61	gcattacaac	tacaccggca	agctccgcgg	tgccgcgtac	cagccgggtg	ccggcctgcg
	121	cgccgacgcc	gtggtgtgcc	tgccggtgtg	cgccttcctc	gtgctagaga	atctagccgt
	181	gttgttggtg	ctcggacgcc	acccgcgctt	ccacgctccc	atgttcctgc	tcctgggcag
	241	cctcacgttg	tcggatctgc	tgccaggcgc	cgcctacgcc	gccgcgcgcc	ggactctggt
	301	atcagaaccg	gctgcagact	gacaccctcg	gccacgact	gtcttcccaa	gttttacaga
	361	cttgttcttt	ttacataaa	gaatttgtag	gaaatgcagc	caaagggtga	gtcggaaaag
	421	atgcagggga	aatgtattta	tgccagcgaca	ccccacaatg	tgaacaaaca	gacaaaaaat
	481	ctgtgccctc	gtggaattga	cgttctgctt	gggaacacag	aaaagaactc	gggtgatgaa
	541	taatggagat	gattccagtg	acaaacgaca	gagatggtga	tggtggtcag	ggaagacctc
	601	tctgcagagg	tagtgacttg	tgatgtgagc	tgagacctct	gtcctgggaa	gaccaaaaga
	661	aaagcatttc	aggatgaggg	aatggcatgc	gcaaaaggccc	tgaggctgaa	atgtgccccat
	721	gtgttctaa	aatgcagcg	atgctgggtg	gcctggagca	gggacggagg	gggagaatgg
	781	gaggagacaa	ggagctgaag	gagtagttcc	cgaaggacct	tggtgggtgat	atagaggact
	841	tcgcttttgc	tctgagtgag	gtgggagcca	tagaagcttc	taagcagaag	agggacttgc
	901	cctaattcag	gtgatcacag	gtgtcttgtg	gcctccatgg	gaggttgaaa	accagagaag
	961	gtgaaggggg	gctgcactga	gccacaggaa	caatgatgga	gattccagct	aagcccgagc
	1021	cccgtggatt	ctagatagat	tttagaggca	gcagacagaa	ttactgagga	attgagtgtg
	1081	agagtggaat	aaagttaaca	aggacaatgc	caaggggtggg	gcacccccaa	atttgactct
	1141	gggagactca	gccaaatct	atctggtaat	aaaatttctt	ttttattttt	cttttttttt
	1201	tttttttttt	tttttttttt	ttgagttggg	atcttgtgct	ctgtc	

Seq. ID. #13

FIGURE 6

```

SIP  MESGLLRPAPVSEVIVLHNYT 7KLRGARYQPGAGLRADAVVCLAVCAFI VLENLAVLLV
SIP2 MESGLLRPAPVSEVIVLHNYT 7KLRGARYQPGAGLRADAVVCLAVCAFI VLENLAVLLV
*****

SIP  LGPHPRFHAPMFLLGSLTSLDLAGAAYAANILLSGPLTLKLSPALWFAREGGVFVALT
SIP2 LGRHPRFHAPMFLLGSLTSLDLAGAAYAA-----
*****

SIP  ASVLSLLAIALERSLTMARRGPAPVSSRGRTLAMAAAANGVSLLGLLPALGWNCLGRLD
SIP2 -----

SIP  ACSTVLPLYAKAYVLCVLAFCVGLAAICALYARIYCQVRANARRLPARPAGTAGTTSTRA
SIP2 -----

SIP  RRKPRSLALLRTL SVLLAFVACWGPLEFLLLLLDVACPARTCPVLLQADPFGLAMANSI
SIP2 -----
SIP  LNPIIYTLTNRDLRHALLRLVCCGRHSCGRDPSSGQSSASAAEASGGLRRCLPPGLDGSF
SIP2 -----
SIP  SCSERSSPQRDGLDTSGSTGSPGAPTAARTLVSEPAAD
SIP2 -----AARTLVSEPAAD
*****

```

Seq. ID. #14

FIGURE 6 (CONT.)



Figure 7

Expression of *Sppr* in Human Tissues

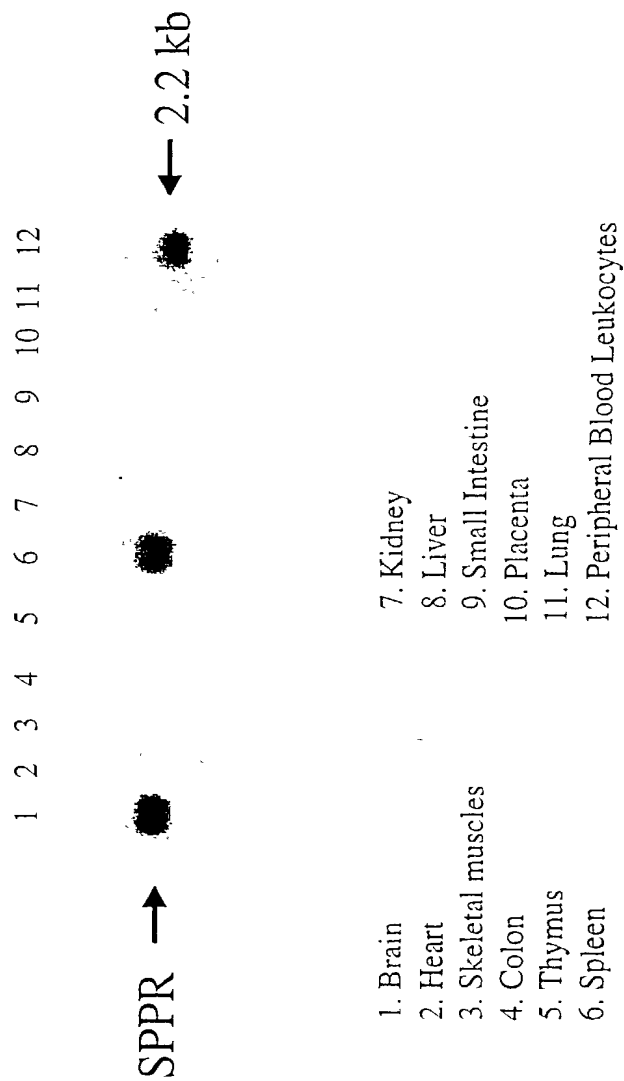
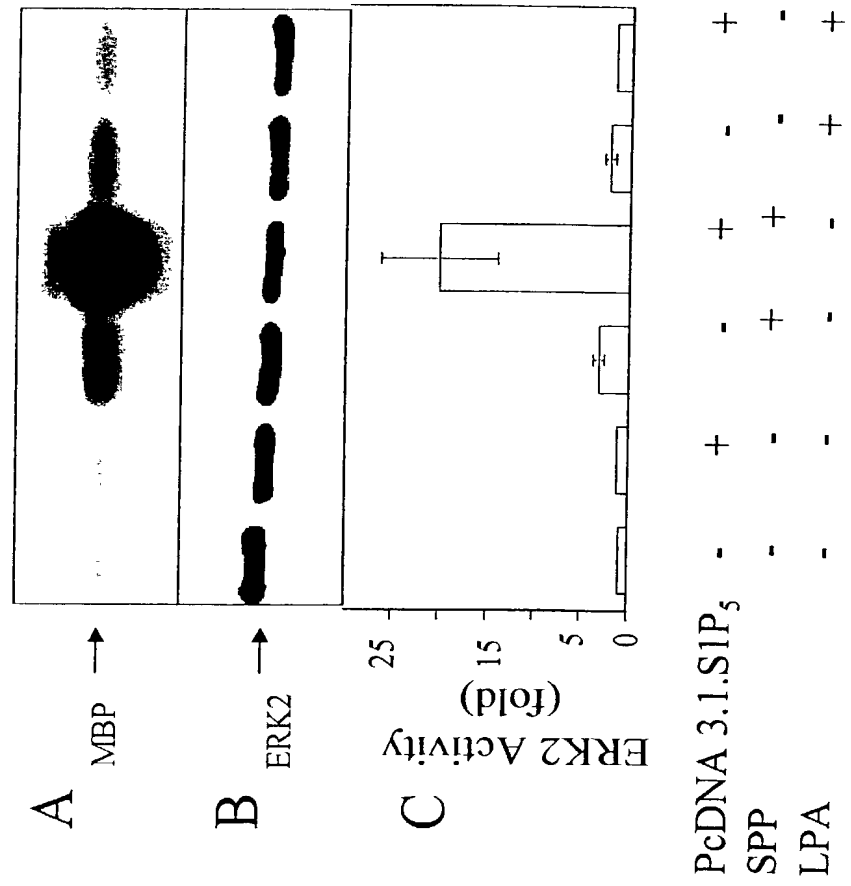






Fig.4



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Fig.5

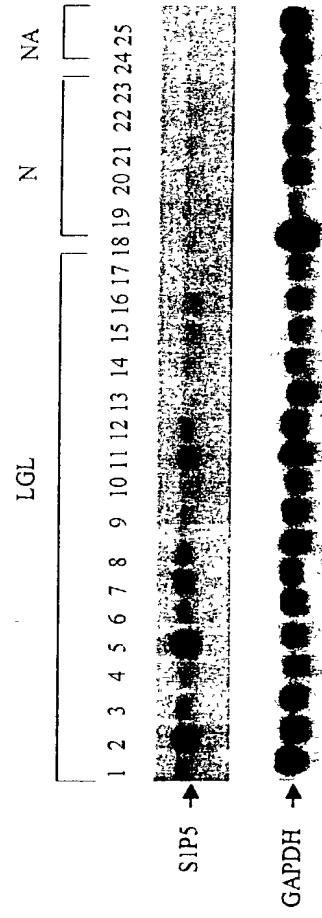


Figure 11

Fig. 6

ALL INFORMATION CONTAINED HEREIN IS UNCLASSIFIED

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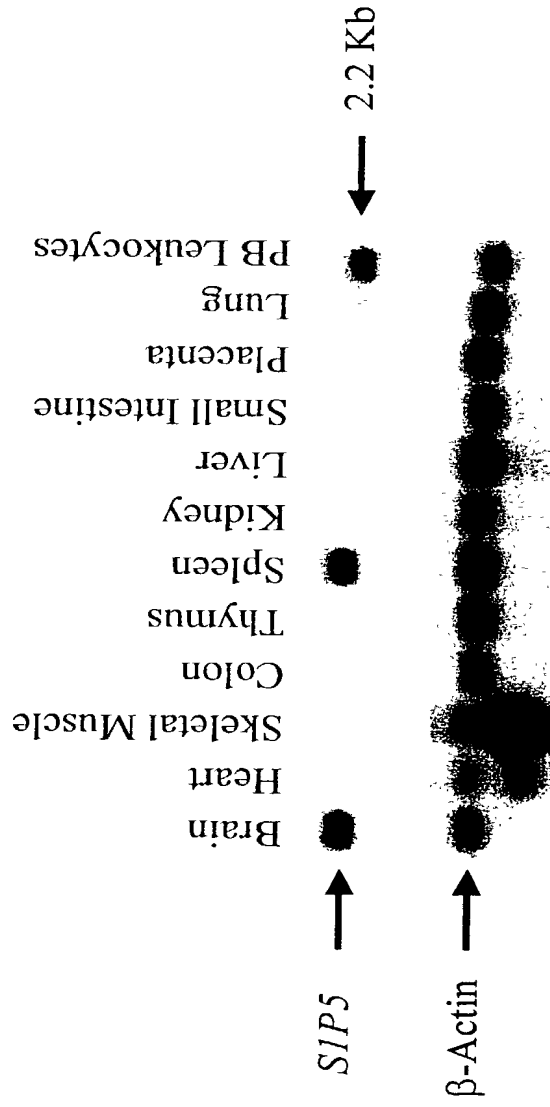


Fig.7

Figure 13